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Project

Date October 11, 1950 Author Philip C. Johnson

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SUBJECT—

TITLE

EXAMINATION OF FOREST INSECT CONDITIONS
MAGRUDER RANGER DISTRICT
BITTERROOT NATIONAL FOREST, MONTANA

Forest Insect Laboratory
Coeur D'Alene, Idaho

INDEX NO.—

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EXAMINATION OF FOREST INSECT CONDITIONS
MAGRUDER RANGER DISTRICT
BITTERROOT NATIONAL FOREST, MONTANA

Philip C. Johnson, Entomologist

In response to a request by Forest Supervisor Guy M. Brandborg dated September 1, 1950, the writer visited the Forest on September 11, 1950 to check on probable forest insect infestations reported earlier this summer by District Rangers J. M. Pomajevich of the Sula District and Oren F. Schumaker of the Magruder District.

After discussing the ranger reports from these two districts with Assistant Forest Supervisor Fred Stell and Timber Management Staff Assistant George S. Haynes, it was decided that an inspection of the Sula District, with its obvious spruce budworm infestation, could be deferred in order to permit an examination of the situation in the Magruder District, the cause of which was not known. Accordingly, the writer spent most of the afternoon in the area of damage in the latter District.

The area containing the damaged trees was confined to the west slope of Haystack Mountain in the east half of Section 6, Township 27 North, Range 14 East, Boise Meridian, Idaho. It lies in the southern portion of the Selway-Bitterroot Primitive Area of the Forest astride a 2-mile section of the Darby (Montana)-Grangeville (Idaho) forest road and about 6 miles northwest of Magruder Ranger Station.

The damage there consisted of the discoloration of the foliage of ponderosa pine trees ranging in age from young to thrifty-mature and mature (Keen age classes 1, 2, and 3). The affected trees occurred in small groups in a comparatively small elevational band along the 4,500-foot contour. The contour of the west slope of Haystack Mountain at this point undulates in and out of many small ravines and it is in these ravines that the discolored trees seem more numerous.

The foliage discoloration follows a peculiar pattern (Figures 1 and 2). Even from a distance the trees do not appear uniformly yellowish or reddish as in the case of trees attacked and killed by bark beetles. Instead, the crowns appear somewhat mottled from a mixture of dead and green needles. The extreme top of the crowns, of the affected trees made up almost wholly of 1949 and 1950 needles, are a normal green.

Immediately below these needles is a band, comprising about 30 percent of the crown length, where the 1950 needles are green but slightly stunted in length and the 1949 and earlier needles are yellowish to reddish color and of normal length. This produces the mottled effect mentioned above. About 20 percent of the crown length below this mottled band is composed entirely of dead needles all of which are red. The discoloration in this area of the crown extends even to the 1950 needles which are only slightly less than normal length. Finally, the lower portion of the crown, probably 40 percent of its total length, is again the mottled coloration described above.

Examination of the trees felled for closer observation showed no insects present whose activities could have caused the foliage discoloration just described. On the needles that had become reddened were small black longitudinal lines visible only with a hand lens. Assuming that these possibly could be the fruiting bodies of a needle blight fungus, needle samples were collected and sent for determination the following day to the Office of Forest Pathology, USDA Bureau of Plant Industry, Soils, and Agricultural Engineering, Portland, Oregon. This office has disclosed that the needles are heavily infected with a leaf-cast fungus, Elytroderma deformans. The disease is capable of killing pine trees of different ages by successively infecting the new foliage. After several years the loss of foliage is so great that the trees cannot sustain themselves and die either from starvation or from attacks of bark beetles that are attracted to the weakened trees.

There is some indication that bark beetles (Dendroctonus and Ips spp.) have attacked several of the infected trees in the Magruder district. It seems advisable, therefore, that the Forest staff be alerted for further attacks of beetles in the present infected trees and also for an increase in the severity of the fungus infection.

Several scattered bark beetle-infested ponderosa pine trees were noted in the stands bordering the road between West Fork and Magruder Ranger Stations and in the vicinity of the latter station. These were not numerous enough, however, to cause any concern now.

In summary, the inspection of the Magruder Ranger District showed no forest insect infestations that could be considered threatening to the present timber stands. It is hoped that an examination of the extent and severity of the spruce budworm infestation in the Sula Ranger District can be made at a future date in line with the laboratory's compilation of information on known budworm infestations in the Northern Rocky Mountain Region.

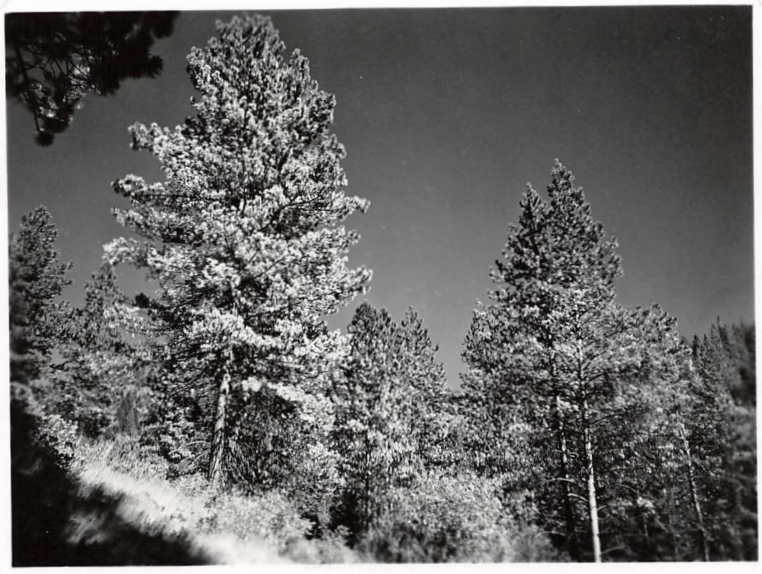

Figure 1. View of foliage discoloration of ponderosa pine trees infected with the leaf-cast fungus, Elytroderma deformans, near Magruder Ranger Station, Bitterroot National Forest, Idaho. The dead needles, in reality reddish or yellowish in color, appear whitish in this monochromatic readition by the use of panchromatic photographic film and a red filter. (Johnson, 1423)

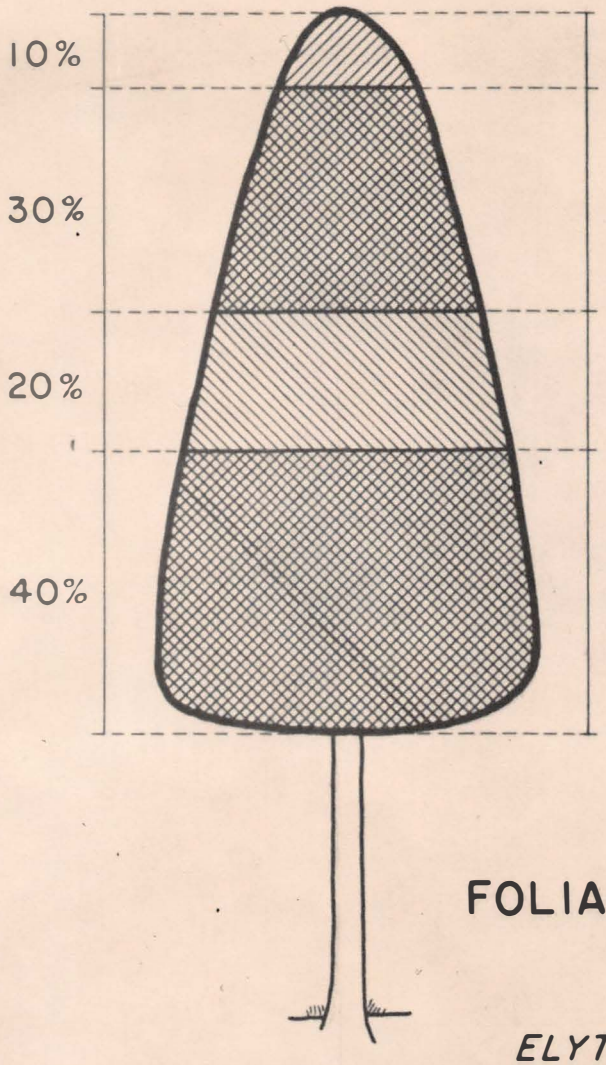

FIG. 2

FOLIAGE DISCOLORATION PATTERN

ELYTRODERMA-INFECTED PONDEROSA PINE

BITTERROOT NATIONAL FOREST
MONTANA

1950